APPENDICES

SMI Road to Success

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Appendix A: Scientific Research Indicating Trends in Children's Health and Diet

Current scientific research indicates these and other trends in children's health:

- Childhood obesity has reached epidemic proportions. The percentage of children who
 are overweight has more than doubled since 1970, and the percentage among
 adolescents has tripled.
- More than 10 percent of younger pre-school children between ages two and five were overweight in 2003, up from 7 percent in 1994.
- These overweight children are at a greater risk for psychological disorders such as decreased self-esteem and depression, and their suffering goes beyond teasing and taunts
- Overweight children and adolescents are more likely to become obese adults, increasing their risk for chronic diseases later in life.
- Type 2 diabetes, which is closely linked to overweight, has skyrocketed among children and adolescents over the past decade. Childhood obesity has also been associated with increased rates of high cholesterol and high blood pressure among children.
- The long-term complications can be devastating. Untreated, diabetes can lead to blindness, kidney failure, leg amputations, stroke, heart disease, and early death.
- The former U.S. Surgeon General David Satcher warned that overweight and obesity, left unabated, might soon cause as much preventable disease and death as cigarette smoking.

Current trends in children's diets are also alarming:

- Only 2 percent of school-aged children meet the Food Guide Pyramid recommendations for all five food groups. Less than one in five children eat the recommended number of servings of fruits or vegetables. The vast majority of children consume too much fat and sodium.
- Adolescents now drink twice as much soda as milk. Only 36 percent of boys and 14
 percent of girls consume enough calcium. Insufficient calcium intake may lead to an
 increased risk of osteoporosis later in life.
- Children with unhealthy eating patterns tend to maintain those unhealthy habits into adulthood.

Appendix A ■ A-1

Appendix B: Traditional Food-Based Menu Planning — Meal Patterns for Lunch

Chart 1A SCHOOL LUNCH PATTERNS TRADITIONAL FOOD-BASED MENU PLANNING - Meal pattern RECOMMENDED MINIMUM QUANTITIES QUANTITIES GROUP I GROUP II GROUP III GROUP IV GROUP V FOOD COMPONENTS AND FOOD ITEMS AGES 1 and 2 AGES 3 and 4 AGES 5-8 AGE 9 AND OLDER AGE 12 AND OLDER PRESCHOOL PRESCHOOL GRADES K-3 GRADES 4-12 GRADES 7-12 Milk, fluid (as a beverage) 8 fl oz (3/4 cup) 8 fl oz (3/4 cup) 8 fl oz (1 cup) 8 fl oz (1 cup) 8 fl oz (1 cup) Meat or Meat Alternate^{1, 2, 3, 4, 5} (quantity of the edible portion as served); 1-1/2 02 Lean meat, poultry, or fish 1 oz 1-1/2 oz 202 3 oz Alternate protein products² 1 oz 1-1/2 02 1-1/2 02 2 07 3 oz Cheese 1 02 1 - 1/2 oz1-1/2 02 202 3 oz Egg (large) 1/2 large egg 3/4 large egg 3/4 large egg 1 large egg 1-1/2 large eggs Cooked dry beans or peast 3/B cup 3/8 cup 3/4 cup 1/4 cup 1/2 cup 2 Tbsp 3 Tbsp 3 Tbsp 4 Tosp Peanut butter or other nut or seed butters 6 Tosp Yogurt, plain or flavored, unsweetened or sweetened - commercially prepared 4 oz or 1/2 cup 8 oz or 3/4 cup 6 oz or 3/4 cup 8 oz or 1 cup 12 oz or 1-1/2 cup The following may be used to meet no more than 50% of the requirement and 1/2 oz = 50%⁵ 3/4 oz = 50%5 3/4 oz = 50% 1 oz = 50%1-1/2 oz = 50% must be used in combination with any of the above: Peanuts, soynuts, tree nuts, or seeds, as listed in program guidance, or an equivalent quantity of any combination of the above meat/meat alternate (1 oz of nuts/seeds=1 oz of cooked lean meat, poultry, or fish)⁵ Vegetable or Fruit^{4, 6} Two or more servings of different vegetables, fruits, 1/2 cup 1/2 cup 1/2 cup 3/4 cup 3/4 cup Grains / Breads 7 (Servings per week); Must be enriched or whole-grain or 5 per week#-minimum 8 per week"-minimum 8 per week "-minimum 10 perweek E-minimum B per week*-minimum made from enriched or whole-grain flour or meal that may include bran and/or of 1/2 per day of 1 per day of 1 per day of 1 per day of 1 per day germ. A serving is a slice of bread or an equivalent serving of biscuits, rolls, etc., or 1/2 cup of cooked rice, macaroni, noodles, other pasta products, or cereal

Appendix B

grains.

¹Must be served in the main dish or the main dish plus only one other menultem.

Enriched macaroni with fortified protein may be used to meet part of the meat or meat alternate requirement.

Alternate protein products must meet the requirements in Appendix A of 7 CFR Part 210.

Cooked dry beans or peas may be used as a meat alternate or as a vegetable, but not as both components in the same meal.

^{*}Nuts and seeds are generally not recommended to be served to children ages 1-3 since they present a choking hazard. If served, nuts and seeds should be finely minded.

No more than one-half of the total requirement may be met with full-strength fruit or vegetable juice.

Enriched macaroni with fortified protein may be used as a meat alternate or as a grains/breads item, but not as both components in the same meal.

[&]quot;For the purposes of this chart, a week equals 5 school days.

Appendix C: Traditional Food-Based Menu Planning —Meal Patterns for Breakfast

Chart ZA SCHOOL BREAKFAST PATTERNS			
TRADITIONAL FOOD-BASED MENU PLANNING ALTERNATIVE — Meal Pattern			
	MINIMUM REQUIREMENTS		
FOOD COMPONENTS AND FOOD ITEMS	AGES 1 and 2	PRESCHOOL	GRADES K-12
Milk (Ruld) (As a beverage, on cereal, or both)	4 fl oz (1/2 cup)	6 fl az (3/4 cup)	8 fl oz (1 cup)
Juice/Fruit/Vegetable Fruit and/or vegetable; or full-strength fruit juice or vegetable juice	1/4 cup	1/2 cup	1/2 cup
SELECT ONE SERVING FROM EACH OF THE FOLLOWING COMPONENTS; TWO FROM ONE COMPONENT; OR AN EQUIVALENT COMBINATION ³ :			
Grains/Breads ²			
Whole-grain or enriched bread	1/2 slice	1/2 slice	1 slice
Whole-grain or enriched biscuit, roll, muffin, etc.	1/2 serving	1/2 serving	1 serving
Whole-grain, enriched, or fortified cereal	1/4 cup or 1/3 oz	1/3 cup or 1/2 az	3/4 cup or 1 oz
Meat or Meat Alternate ^{2.4.5}			
Lean meat/poultry or fish	1/2 07	1/2 oz	1 oz
Alternate protein products ²	1/2 02	1/2 oz	1 oz
Cheese	1/2 07	1/2 oz	1 oz
Egg (large)	1/2 large egg	1/2 large egg	1/2 large egg
Peanut butter or other nut or seed butters	1 Tosp	1 Tbsp	2 Tbsp
Cooked dry beans and peas	2 Tosp	2 Tbsp	4 Tosp
Nuts and/or seeds (as listed in program guidance) ^{4,5}	1/2 az ^c	1/2 oz ^s	1 oz
Yogurt, plain or flavored, unsweetened, or sweetened – commercially prepared	2 az or 1/4 aup	2 oz or 1/4 cup	4 oz or 1/2 sup

Appendix C

¹ Minimum servings for meat/meat alternate = 0.25 ounce and for grains/breads = 1/4 serving, ² Grains/ Breads must be enriched or whole-grain or made from enriched or whole-grain flour or meal that may include bran and/or germ.

² Alternate protein products must meet requirements in Appendix A 7 CFR Part 220.

⁴No more than 1 ounce of nuts and/or seeds may be served in any one breakfast.

⁵ Nuts and seeds are generally not recommended to be served to children ages 1-3 since they present a choking hazard. If served, nuts and seeds should be finely minced.

Appendix D: Enhanced Food-Based Menu Planning—Meal Patterns for Lunch

Chart 1B SCHOOL LUNCH PATTERNS ENHANCED FOOD-BASED MENU PLANNING — Meal Pattern OPTION FOR MINIMUM REQUIREMENTS FOOD COMPONENTS AND FOOD ITEMS GRADES K-3 AGES 1 and 2 PRESCHOOL GRADES K-6 GRADES 7-12 Milk, fluid (as a beverage) 6 fl oz (3/4 cup) 8 fl oz (3/4 cup) 8 fl oz (1 cup) 8 fl oz (1 cup) 8 fl oz (1 cup) Meat or Meat Alternate^{1,2,3,4,5} (quantity of the edible portion as served): Lean meat, poultry, or fish 200 202 1-1/2 oz 1 oz 1-1/2 02Alternate protein products? 1 oz 1-1/2 oz202 202 1-1/2 oz Cheese 1 oz 1-1/2 022 02 202 1-1/2 02 Egg (large) 1/2 large egg 3/4 large egg 1 large egg 1 large egg 3/4 large egg Cooked dry beans or peas! 3/8 cup 1/2 cup 1/2 cup 3/8 cup 1/4 cup 4 Tosp Peanut butter or other nut or seed butters 2 Tbsp 3 Tbsp 4 Tbsp 3 Tosp Yogurt, plain or flavored, unsweetened, or sweetened - commercially prepared 4 oz or 1/2 cup 8 oz or 3/4 cup 8 oz or 1 cup 8 oz or 1 cup 6 oz or 3/4 cup The following may be used to meet no more than 50% of the requirement and 1/2 oz = 50%⁵ 3/4 oz = 50%5 1 oz = 50%1 oz = 50%3/4 oz = 50% must be used in combination with any of the above: Peanuts, soynuts, tree nuts, or seeds, as listed in program guidance, or an equivalent quantity of any combination of the above meat/ meat alternate (1 oz of nuts/seeds = 1 oz of cooked lean meat, poutry, or fish).5 Vegetable or Fruit^{4,6} Two or more servings of different vegetables, fruits, 1/2 cup 1/2 cup 3/4 cup plus an extra 1 CUD 3/4 cup 1/2 cup over a week or both Grains/Breads7 (Servings per week): Must be enriched or whole-grain or 5 per week"-minimum B per week"-minimum 12 per weekil-minimum 15 per week - minimum 10 perweek "-minimum made from enriched or whole-grain flour or meal that may include brain and/or of 1/2 per day of 1 per day of 1 per day? of i per day of 1 per day germ. A serving is a slice of bread or an equivalent serving of biscuits, rolls, etc., or 1/2 cup of cooked rice, macaroni, noodles, other pasta products, or cereal grains.

Appendix D

¹Must be served in the main dish or the main dish plus only one other menulitem.

Enriched macaroni with fortified protein may be used to meet part of the meat or meat alternate requirement.

Alternate protein products must meet requirements in Appendix A of 7 CFR Part 210.

Cooked dry beans or peas may be used as a meat alternate or as a vegetable, but not as both components in the same meal.

^{*}Nuts and seeds are generally not recommended to be served to children ages 1-3 since they present a choking hazard. If served, nuts and seeds should be finely minced.

[&]quot;No more than one-half of the total requirement may be met with full-strength fruit or vegetable juice.

^{*}Enriched macaroni with fortified protein may be used as a meat alternate or as a grains/breads item, but not as both components in the same meal.

For the purposes of this chart, a week equals 5 school days.

OUp to one grains/ breads serving per day may be a grain-based dessert.

Appendix E: Food-Based Menu Planning—Meal Patterns for Breakfast

Chart 2B SCHOOL BREAKFAST PATTERNS ENHANCED FOOD-BASED MENU PLANNING ALTERNATIVE — Meal Pattern MINIMUM REQUIREMENTS FOOD COMPONENTS AND FOOD ITEMS REQUIRED FOR OPTION FOR AGES 1 and 2 PRESCHOOL GRADES K-12 GRADES 7-12 Milk (Ruld) (As a beverage, on cereal, or both) 4 fl oz (1/2 cup) 6fl oz (3/4 cup) 8 fl oz (1 cup) 8 fl oz (1 cup) Juice / Fruit / Vegetable Fruit and/or vegetable; or full-strength fruit juice or vegetable juice 1/2 cup 1/4 cup 1/2 cup 1/2 cup SELECT ONE SERVING FROM EACH OF THE FOLLOWING COMPONENTS: OR TWO FROM ONE COMPONENT; OR AN EQUIVALENT COMBINATION¹ Grains/Breads² Whole-grain or enriched bread 1/2 slice 1/2 slice 1 slice 1 slice Whole-grain or enriched biscuit, roll, muffin, etc. 1/2 serving 1/2 serving 1 serving 1 serving Whole-grain, enriched, or fortified cereal 1/3 cup or 1/2 oz 1/4 cup or 1/3 oz 3/4 cup or 1 oz 3/4 cup or 1 oz - Plus an additional serving of one of the Grains/Breads above. Meat or Meat Alternate 2.4.5 Lean meat/poultry or fish 1/2 02 1/2 02 102 107 Alternate protein products² 1/2 oz 1/2 02 1 oz 1 oz Cheese 1/2 oz 1/2 02 102 1 oz Egg (large) 1/2 large egg 1/2 large egg 1/2 large egg 1/2 large egg Peanut butter or other nut or seed butters 1 Tbsp 1 Tbsp 2 Tbsp 2 Tosp Cooked dry beans and peas 2 Tbsp 2 Tbsp 4 Tosp 4 Tosp Nuts and/or seeds (as listed in program guidance)^{1,5} 1/2 025 1/2 025 102 102 Yogurt, plain or flavored, unsweetened, or sweetened - commercially prepared 2 oz or 1/4 cup 2 oz or 1/4 cup 4 oz or 1/2 cup 4 oz or 1/2 cup

Appendix E

Minimum servings for meat/meat alternate = 0.25 ounce and for grains/breads = 1/4 serving.

Grains/Breads must be enriched or whole-grain or made from enriched or whole-grain flour or meal that may include bran and/or germ.

Alternate protein products must meet requirements in Appendix A of 7 CFR Part 220.

⁴No more than 1 ounce of nuts and/or seeds may be served in any one breakfast.

Nuts and seeds are generally not recommended to be served to children ages 1-3 since they present a choking hazard. If served, nuts and seeds should be finely minded.

Appendix F: Nutrient Standard Menu Planning/Assisted Nutrient Standard Menu Planning Requirements for Lunch and Breakfast

Menus planned under the NSMP approach must meet two requirements:

- When averaged over the school week, school lunches and school breakfasts must meet the specific age- or grade-based nutrient standards as defined in 7 CFR Parts 210.10 and 220.8; and
- 2) At a minimum, planned menus must contain the menu items as summarized in Chart 6 below. Additional menu items may need to be added in order to meet nutrient standards and/or to increase variety.

MINIMUM REQUIRED MENU ITEMS FOR NUTRIENT STANDARD MENU PLANNING

	MINIMUM AMOUNTS		
Menu Items	Lunch	Breakfast	
Entrée	1 serving	None	
Other menu item(s) (side dishes)	1 serving	2 servings	
Fluid milk	1 serving	1 serving	

Appendix G(1): Grains/Bread Requirement for Food-Based Menu Planning Approaches

LUNCH GRAINS AND BREADS REQUIREMENTS TRADITIONAL FOOD-BASED MENU PLANNING APPROACH

The requirement for the grain bread is based upon the minimum number of **daily** servings plus a required number of total servings over a **five-day school week**. Schools serving lunch six or seven days per week should increase the weekly quantity by approximately 20% for each additional day. Schools operating less than five days may decrease the weekly quantity by approximately 20% for each day less than five.

Tip for RCCIs: Bread/Grain Calculations for other than a five-day week, the number of servings would be proportionally increased or decreased by rounding up to the nearest \frac{1}{4} serving as indicated in the following chart.

Lunch Daily and Weekly Requirements for Grains/Breads

	Ages 1 and 2	Ages 3 and 4	Grades K-3	Grades 4-12	Grades 7-12 (Optional)
Number of school days in the week	Minimum of ½ serving per day with total number of servings per week indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation
		-	_	_	
Five days	5	8	8	8	10
Seven days	7	11 1/4	11 1/4	11 1/4	14
Six days	6	9 3/4	9 3/4	9 3/4	12
Four days	4	6 ½	6 ½	6 ½	8
Three days	3	5	5	5	6
Two days	2	3 1/4	3 1/4	3 1/4	4
One day	1	1 3/4	1 3/4	1 3/4	2

Appendix G-1

Appendix G (2): Grains/Bread Requirement for Food-Based Menu Planning Approaches

LUNCH GRAINS AND BREADS REQUIREMENTS ENHANCED FOOD-BASED MENU PLANNING APPROACH

The requirement for the grain bread is based upon the minimum number of **daily** servings plus a required number of total servings over a **five-day school week**. Schools serving lunch six or seven days per week should increase the weekly quantity by approximately 20% for each additional day. Schools operating less than five days may decrease the weekly quantity by approximately 20% for each day less than five.

Tip for RCCI's: Bread/Grain Calculations for other than a five day week the number of servings would be proportionally increased or decreased by routing up to the nearest ¼ serving as indicated in the following chart.

Lunch Daily and Weekly Requirements for Grains/Breads

	Ages 1 and 2	Ages 3 and 4	Grades K-3	Grades 4-12	Grades 7-12 (Optional)
Number of school days in the week	Minimum of ½ serving per day with total number of servings per week indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation	Minimum of 1 serving per day with total number of servings per week as indicated by number of days of operation
Five days	5	8	8	8	10
Seven days	7	11 1/4	11 1/4	11 1/4	14
Six days	6	9 3/4	9 3/4	9 3/4	12
Four days	4	6 1/2	6 ½	6 1/2	8
Three days	3	5	5	5	6
Two days	2	3 1/4	3 1/4	3 1/4	4
One day	1	1 3/4	1 3/4	1 3/4	2

Appendix G-2



Source: U.S. Department of Agriculture, Food and Nutrition Services, Child Nutrition Division, Technical Assistance Section.

Appendix H

Appendix I: Sample Product Formulation Statement (Product Analysis) for Meat/Meat Alternate (M/MA) Products

(Place information on company letterhe the company. If the product contains Al Product Name:	PP, provide documentation	n described in Attachment A)
Manufacturer:		
Case/Pack/Count/Portion/Size:		
List variety(ies) and cuts of meat used in protal weight (per portion) of uncooked pro	roduct:duct:	
Weight of raw meat per portion (List each	variety separately):	
Percent of fat in raw meat (List fat in each	variety separately):	
Weight/measure (as appropriate) of meat al	ternate(s) (specify MA used):
*If MA is an APP, specify the source (e.g., of protein in APP as purchased:	soy, whey), type (e.g., flour	, isolate, concentrate), and percent
*Weight of dry APP in one portion of prod	uct:	
*Weight of water (liquid) to fully hydrate of	dry APP in one portion of pro	oduct:
*Percent protein contained in the fully hydrony	rated or formulated APP:	
Total weight (per portion) of product as pur	rchased:	
I certify that the above information is true a product (ready for serving) contains prepared according to directions.		
I further certify that any APP used in this p (7 CFR Parts 210, 220, 225 or 226, Append		l Nutrition Service regulations
SIGNATURE	TITLE	
PRINTED NAME	DATE	PHONE NUMBER

This information is needed if a creditable Alternate Protein Product (APP) is used in the product and counted toward meeting the meat/meat alternate requirement. (Revised 04/03)

Appendix I

Appendix J: Sample Nutrition Facts Label

Nutrit Serving Size 1 Servings Per C	cup (228g)		cts
Golf villigo T Gr G	Omanio 2		
Amount Per Serv	dng		
Calories 260	Ca	lories from	Fat 12
		% Dai	ly Value*
Total Fat 13g		,,, ,,,	20%
Saturated Fa			25%
Trans Fat 2g			
Cholesterol:	30mg		10%
Sodium 660m	g		28%
Total Carbol	vdrate 3	10	10%
Dietary Fiber			0%
	- Vg		
Sugars 5g			
Protein 5g			
Vitamin A 4%	•	Vitam	in C 2%
Calcium 15%		Iron 4	
* Percent Daily Value Your Daily Values your calorie needs:	es are based may be highe	on a 2,000 c	alorie diet.
Total Fat	Less than	65g	80g
Sat Fat	Less than	209	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber Calories per gram:		25g	30g
Fat 9 *	Carbohydrai	le 4 *	Protein 4

For more information on the Nutrition Facts Label, visit the FDA website at http://www.cfsan.fda.gov/~dms/foodlab.html

Appendix I

Appendix K: Manufacturers' Data Submission Form

For directions on how to fill out this form, see reverse side.
1. Product Identification
PRODUCT NAME:
Brand
Product code
List CN Label number if appropriate
Is this product in the Child Nutrition (CN) Database?
CN DATABASE = Yes No
2 Declara Cina and Coming and Declara
2. Package Size and Servings per Package Package Size = grams lbs floor
Package Size = grams lbs fl. oz.
Standard Serving Size = Number of Servings per Package =
Number of Servings per 1 ackage =
3. Basis for Nutrient Data
Nutrient data is being given: (Check one)
As Served As Purchased
Analysis is based on: (Check one)
Per Serving 100 grams
Weight per serving = grams
4. Individual Values of Nutrients and Dietary Components
If you <i>do not</i> have information on a nutrient, write "M" or "missing." If this product <i>does not contain</i> a particular nutrient, write "0."
Calories kcal Protein grams
Total fat grams Saturated fat grams
Carbohydrates grams Sodium milligrams
Total dietary fiber grams Cholesterol milligrams
Calcium milligrams -or% DV (Daily Value) Iron milligrams -or% DV
Vitamin C milligrams or 9/ DV
Vitamin C milligrams -or% DV Vitamin A NE -or% of DV
IU = International Units, RE = Retinol Equivalents
To international onto, fee rectified Equivalents
5. Fat and Moisture Gain/Loss
When this product is prepared, there is a:
Fat change (+/-)% Moisture change (+/-)%
6. Special Instructions for Preparation (if appropriate) To prepare this product, the manufacturer recommends:
(Note to Design:
Source: U.S. Department of Agriculture, Food and Nutrition Service, A Menu Planner for Healthy Scho
Meals, 1998, 201-202.)

Appendix K ■ K-1

HOW TO FILL OUT THIS FORM:

USDA has developed this standardized form to help schools obtain information on foods they will be serving to children. They will use this information to develop recipes, analyze menus for nutritional value, and prepare products for lunch or breakfast.

- **1. Product Identification**: List name of product (and brand, if appropriate). Also list product code if possible. If you know the product has a CN Label number, list that as well. Check yes or no for CN Database
- **2. Package Size and Servings Per Package**: Write in package size as appropriate in grams, pounds, or fluid ounces. Indicate standard serving size and number of servings per package. 3. Basis for Nutrient Data: Indicate with a check mark whether you are submitting nutrient data for this product on an "As Served" or "As Purchased" basis. Use the "As Served" basis for any food that *does not have*: (1) any ingredients added in preparation or (2) any fat absorbed during preparation.
- **3. Basis for Nutrient Data**: Indicate with a check mark whether you are submitting nutrient data for this product on an "As Served" or "As Purchased" basis. Use the "As Served" basis for any food that *does not have*: (1) any ingredients added in preparation or (2) any fat absorbed during preparation.

Use the "As Purchased" basis for any food that: (1) has ingredients added in preparation (such as milk, eggs, and oil added to baked product mixes); (2) is prepared by frying; (3) can be prepared in varying ways (for example, a food that can be baked *or* fried); or (4) gains or loses moisture/fat during preparation.

In addition, indicate whether nutrient analysis is based on 100 grams or per serving. Also indicate weight per serving.

- **4. Individual Values of Nutrients and Dietary Components**: Please fill out completely, leaving no lines blank. (1) If you have information on a nutrient, write the specific value in the unit of measurement indicated. (2) If you do *not* have information on a nutrient, write "M" or "missing." (3) If this product *does not contain* a particular nutrient, write "0."
- **5. Fat and Moisture Gain/Loss**: If you checked "As Purchased" above, also fill in this section if there is a fat or moisture change during preparation.

(Fat may be gained or lost in cooking some foods, thereby changing the foods' nutrient value. Methods of preparation such as breading, frying, or baking affect this fat gain or loss. For example, chicken baked in the oven will lose fat during cooking, while batter-coated or breaded chicken that is deep fried will gain fat. If fat is absorbed or gained, fat grams and calories from fat will be increased. If fat is lost, fat grams and calories from fat will be decreased.)

6. Instructions for Preparation: If appropriate, indicate instructions such as: ingredients to be added, cooking methods, cooking time, and cooking temperature.

Source: U.S. Department of Agriculture, Food and Nutrition Service, *A Menu Planner for Healthy School Meals*, 1998, 201-202.

Appendix K ■ K-2

Appendix L: Sample of a Food Substitution Form

FOOD OR MENU ITEM TO BE CHANGED	SUBSTI- TUTION OR	APPROVED BY	DATE OF
	LEFTOVER	2.	SUBSTI- TUTION/ LEFTOVER

Appendix L

Appendix M: Sources of Nutrients

Food Sources of Vitamin A

Food sources of vitamin A ranked by International Units (IU). All foods listed are \geq 20% (1000 IU (of the Daily Value (DV)) of 5000 IU for vitamin A. The DVs are used on the Nutrition Facts Label and are based on a 2,000 Calorie diet.

Food Item	Serving Size	Vitamin A (IU)
Sweet potato, cooked, baked in skin	1 potato (146 grams)	28,058
Sweet potato, cooked, boiled, without skin	1 potato (156 grams)	24,554
Carrots, frozen, cooked, drained	¹⁄₂ cup	12,137
Sweet potato, canned, vacuum pack	½ cup	10,179
Pumpkin, canned	¹⁄₄ cup	9,532
Kale, cooked, drained	½ cup	8,854
Carrots, canned, drained	½ cup	8,154
Collards, cooked, boiled, drained	½ cup	7,709
Carrots, raw	½ cup	6,620
Dandelion greens, cooked, boiled, drained	½ cup	5,207
Vegetables, mixed, canned, drained	½ cup	4,746
Spinach, cooked, boiled, drained	¹⁄₄ cup	4,717
Mustard greens, cooked, boiled, drained	½ cup	4,426
Cabbage, Chinese (pak-choi), cooked, boiled, drained	½ cup	3,612
Turnip greens, cooked, boiled, drained	½ cup	2,745
Cantaloupe, raw	½ cup	2,706
Squash, winter, all varieties, cooked, baked	1/4 cup	2,677
Cantaloupe, raw	1/8 melon	2,334
Lettuce, green leaf, raw	½ cup	2,074
Apricots, canned juice pack,	½ cup	2,063
with skin, solids and liquids	•	,
Soup, bean with ham, canned, chunky, ready-to-serve, commercial	½ cup	1,976
Vegetable juice cocktail, canned	4 fl. oz.	1,885
Peas, green, frozen, cooked, drained	½ cup	1,680

Food Sources of Vitamin A (Continued)

Food Item	Serving Size	Vitamin A (IU)
Lettuce, cos or romaine, raw	½ cup	1,626
Apricots, canned, heavy syrup	½ cup	1,587
pack, solids and liquids		
Broccoli, cooked, boiled,	½ cup	1,535
drained		
Grapefruit, raw, pink and red	½ grapefruit	1,415
Spinach, raw	½ cup	1,407
Plums, canned purple, juice	¹⁄₂ cup	1272
pack, solids and liquids		
Apricots, dried, sulfured,	10 halves	1,261
uncooked		
Peppers, sweet, red, raw	¹⁄₄ cup	1,167
Tangerines (mandarin oranges),	½ cup	1,059
canned, light syrup pack		

Source: Adapted from the Agricultural Research Service (ARS) Nutrient Database for Standard Reference, Release 17.

Food Sources of Vitamin C

All foods in this list contain 8 milligrams (mg) or more of vitamin C, which meets 20% of the nutrient target for school lunch (grades 4-12).

Tautient target for school functi		T ''4 : G ()
Food Item	Serving Size	Vitamin C (mg)
Peppers, sweet, red, raw	1/4 cup	71
Oranges, raw, all commercial	1 medium	70
varieties		
Peaches, frozen, sliced,	½ cup	59
sweetened		
Peppers, sweet, red, cooked,	½ cup	58
boiled, drained		
Strawberries, frozen,	½ cup	53
sweetened, sliced		
Strawberries, raw	½ cup	49
Papayas, raw	¼ papaya	47
Cranberry juice cocktail,	4 fl. oz.	45
bottled		
Kohlrabi, cooked, boiled,	½ cup	45
drained	•	
Orange juice, canned,	4 fl. oz.	43
unsweetened		
Orange juice, chilled, includes	4 fl. oz.	41
from concentrate		
Broccoli, frozen, chopped,	½ cup	37
boiled	/2 -	ζ,
Kiwi fruit (Chinese	½ medium	35
gooseberries), fresh	/2 IIICGIGIII	35
Vegetable juice cocktail,	4 fl. oz.	34
canned	11. 02.	J.
Tomato soup, canned,	½ cup	33
prepared with equal amount of	/2 cu p	33
water		
Peppers, sweet, green, raw	½ cup	30
Melons, cantaloupe, raw	½ cup	29
Sweet potato, cooked, baked	1 potato	29
in skin	1 potato	29
	1/8 melon	28
Melons, honeydew, raw		28 27
Kale, cooked, boiled, drained	½ cup	
Peppers, hot chili, green, raw	¹ / ₄ pepper	27
Melons, cantaloupe, raw	1/8 melon	25 25
Peppers, sweet, green, cooked,	½ cup	25
boiled, drained		

Food Sources of Vitamin C (Continued)

Food Item	Serving Size	Vitamin C (mg)
Watermelon, raw	1 wedge (10 oz)	23
Asparagus, frozen, cooked, boiled	½ cup	22
	1/ 2010	22
Cabbage, Chinese (pak-choi),	½ cup	22
cooked, boiled	1/ 222	22
Collards, frozen, chopped, boiled	½ cup	22
	1 tangarina	22
Tangerines (mandarin oranges), raw	1 tangerine	22
Tomato juice, canned	4 fl. oz.	22
Raspberries, frozen, red,	4 11. 02. ½ cup	21
sweetened	/2 Cup	21
Broccoli, raw	¹⁄₄ cup	20
Grapefruit, raw, white	½ grapefruit	20
Turnip greens, frozen, cooked,	½ cup	20
boiled	/2 ca p	20
Potatoes, white, flesh and skin,	1 potato (7 oz)	19
baked	1 petite (* 62)	
Brussels sprouts, frozen,	¹⁄₄ cup	18
cooked, boiled		
Mustard greens, cooked,	½ cup	18
boiled	1	
Turnip greens, frozen, cooked,	½ cup	18
boiled	1	
Peppers, hot chili, red, raw	½ pepper	16
Asparagus, frozen, cooked,	4 spears	15
boiled	•	
Cabbage, cooked, boiled	½ cup	15
Melons, honeydew, raw	½ cup	15
Soybeans, green, cooked,	½ cup	15
boiled		
Spinach, canned, drained	¹⁄₄ cup	15
solids		
Cauliflower, frozen, cooked,	½ cup	14
boiled		
Grapefruit sections, canned,	½ cup	14
light syrup pack, sol. & liquid		
Pineapple, raw, all varieties	½ cup	14
Pineapple juice, canned,	4 fl. oz.	13
unsweetened		
Tomato products, canned,	½ cup	13
puree		
Cauliflower, raw	½ cup	12
Mangos, raw	½ cup	12

Food Sources of Vitamin C (Continued)

Food Item	Serving Size	Vitamin C (mg)
Pineapple, canned, juice pack,	¹⁄₂ cup	12
solids and liquids		
Potato salad, school-prepared	¹⁄₂ cup	12
Tangerines (mandarin	¹⁄₄ cup	12
oranges), canned		
Lima beans, immature seeds,	½ cup	11
frozen, cooked	_	
Potatoes, white, mashed,	½ cup	11
dehydrated, prepared from		
flakes without milk, whole		
milk and butter added		
Potatoes, white, mashed,	½ cup	11
school-prepared	•	
Sweet potato, canned, syrup	½ cup	11
pack, drained solids	•	
Tomatoes, red, ripe, raw,	½ cup	11
chopped	1	
Banana	Medium	10
Cabbage, red, raw	1/4 cup	10
Coleslaw, school-prepared	1/4 cup	10
Dandelion greens, cooked,	½ cup	10
boiled, drained	1	
Pimento, canned	1 tbsp.	10
Potatoes, hash-brown, school-	½ cup	10
prepared	1	
Squash, summer, all varieties,	½ cup	10
raw	1	
Squash, winter, all varieties,	¹⁄₂ cup	10
cooked, baked	1	
Carambola (starfruit), raw	¹⁄₄ cup	09
Corn, sweet, yellow, canned	½ cup	09
Grapes, red or green (such as	½ cup	09
Thompson seedless), raw		
Sauerkraut, canned, solids and	¹⁄₄ cup	09
liquids	•	
Tomato products, canned,	½ cup	09
sauce	1	
Tomatoes, cherry, red, ripe,	4 cherry tomatoes	09
raw	-	
Lemon juice, canned or	2 tbsp.	08
bottled	•	

Food Sources of Vitamin C (Continued)

Food Item	Serving Size	Vitamin C (mg)
Peas, green, canned, regular	½ cup	08
pack		
Peas, green, frozen, cooked,	½ cup	08
boiled		
Potato wedges, frozen,	¹⁄₂ cup	08
commodity		
Refried beans, canned	¹⁄₂ cup	08
(includes commodity)		
Rutabagas, cooked, boiled	½ cup	08

Source: Adapted from the Agricultural Research Service (ARS) Nutrient Database for Standard Reference, Release 17.

Food Sources of Calcium

Good Food Sources of Calcium

All foods listed in this chart are \geq 20% (200 milligrams) of the Daily Value (DV) of 1000 milligrams (mg) for calcium. The DVs are used on the Food and Drug Administration's Nutrition Facts Label and are based on a 2000 calorie diet. A food that contains 200 mg. or more of calcium contributes a substantial amount of calcium to the diet and is used here to define a good source.

Food Item	Serving Size	Calcium (Mg)
Yogurt, plain, skim milk	8-oz container	452
Yogurt, plain, low fat	8-oz container	415
Yogurt, fruit, low fat	8-oz container	345
Cheese, ricotta, part skim milk	½ cup	335
Milk, nonfat, fluid	1 cup	306
Milk, fluid, 2% milkfat	1 cup	285
Milk, whole, 3.25% milkfat	1 cup	276
Yogurt, plain, whole milk	8-oz container	275
Cheese, ricotta, whole milk	½ cup	255
Cheese, includes cheddar, mozzarella	1 oz	204 - 214
(part-skim), muenster and provolone		
Cereal, ready-to-eat, fortified	1 oz	236 - 1043

Other Food Sources of Calcium

All foods listed in this chart contain less than 200 milligrams of calcium. When these foods are used in combination with foods high in calcium and/or other foods in this list, they can assist schools in reaching the nutrition standard for calcium.

Food Item	Serving Size	Calcium (Mg)
Collards, frozen, chopped, cooked	½ cup	179
boiled, drained		
Cornbread, prepared from recipe,	1 piece (2 oz)	162
made with low fat (2%) milk		
Spinach, frozen, boiled, cooked,	½ cup	146
drained		
Soybeans, green, cooked, boiled,	½ cup	131
drained		
Seeds, sesame butter, tahini,	2 tbsp	128
Turnip greens, frozen, cooked,	½ cup	125
boiled, drained		
Fish, salmon, pink, canned, solids	2 oz	119
with bone and liquid		
Cowpeas (Blackeyes), immature	½ cup	106
seeds (not dried) cooked, boiled,		
drained		

Other Food Sources of Calcium (Continued)

Food Item	Serving Size	Calcium (Mg)
Frozen yogurt, soft-serve	½ cup	103
Cereal, oats, instant, fortified, plain,	1 packet	99
prepared with water		
English muffins, plain, enriched, with	1 muffin	99
calcium propionate		
Beans, white, mature seeds, canned	½ cup	91
Kale, frozen, cooked, boiled, drained	½ cup	90
Okra, frozen, cooked, boiled, drained	½ cup	89
Soybeans, mature, cooked, boiled	½ cup	88
Ice cream, vanilla	½ cup	84
Cabbage, Chinese (pak-choi),	½ cup	79
cooked, boiled, drained		
Cheese, processed, American	1 oz	78
Waffles, plain, frozen, ready-to-eat	1 waffle (33 g)	77
Fish, ocean perch, Atlantic, cooked,	2 oz	76
dry heat		
Cereal, cream of wheat, regular,	2/3 cup	75
cooked with water	-	
Beans, baked, canned, with pork and	½ cup	71
tomato sauce	-	
Dandelion greens, cooked, boiled,	½ cup	71
drained	-	
Cheese, cottage, creamed	½ cup	70
Nuts, almonds	1 oz (24 nuts)	70
	` '	

Source: Adapted from the Agricultural Research Service (ARS) Nutrient Database for Standard Reference, Release 17.

Food Sources of Iron

All foods in this list contain 0.8 mg or more of iron, which meets 20% of the nutrient target for school lunch (grades 4-12).

Food Item	Serving Size	Iron (Mg)
Soybeans, mature cooked, boiled	½ cup	4.4
Beans, baked, canned, with pork and	½ cup	4.0
tomato sauce		
Beans, white, mature seeds, canned	½ cup	4.0
Beef, liver, cooked	2 oz	3.5
Molasses, blackstrap	1 tbsp	3.5
Lentils, mature seeds, cooked, boiled	½ cup	3.3
Spinach, cooked, drained	½ cup	3.2
Beans, kidney, red, mature seeds, cooked	½ cup	2.6
Chickpeas (garbanzo beans), mature	½ cup	2.4
seeds, cooked		
Soybeans, green, cooked	¹⁄₂ cup	2.3
Beans, navy, mature seeds, cooked	¹⁄₂ cup	2.2
Lima beans, large, mature seed, dried,	½ cup	2.2
cooked		
Cake, gingerbread, from recipe	1 piece	2.1
Refried beans, canned (includes USDA	½ cup	2.0
commodity)		
Cereals ready-to-eat	1 cup	2 -22
Beans, great northern, mature seeds,	½ cup	1.9
cooked		
Potato, baked, flesh and skin	1 medium	1.9
Rolls, hard (includes Kaiser)	1 roll	1.9
Beans, black, mature seeds, cooked	¹⁄₂ cup	1.8
Beans, pinto, mature seeds, cooked	½ cup	1.8
boiled		
Beef, chuck, blade roast, braised	2 oz	1.8
Lima beans, immature seeds, frozen,	½ cup	1.8
baby or fordhook, cooked		
Biscuits, plain or buttermilk, prepared	2-1/2" biscuit	1.7
from recipe		
Cherries, sour, red, canned, water pack,	¹⁄₂ cup	1.7
solids and liquids (includes USDA		
commodity)		
Sauerkraut, canned, solids and liquids	¹⁄₂ cup	1.7
Bread, cornbread, from recipe, made with	1 piece	1.6
low-fat milk	•	
Bread, pita, white, enriched	6-1/2" pita	1.6
Peas, green, cooked	½ cup	1.6
Turnip greens, frozen, cooked, boiled	½ cup	1.6
Beans, pinto, mature seeds, cooked boiled Beef, chuck, blade roast, braised Lima beans, immature seeds, frozen, baby or fordhook, cooked Biscuits, plain or buttermilk, prepared from recipe Cherries, sour, red, canned, water pack, solids and liquids (includes USDA commodity) Sauerkraut, canned, solids and liquids Bread, cornbread, from recipe, made with low-fat milk Bread, pita, white, enriched Peas, green, cooked	½ cup 2 oz ½ cup 2-1/2" biscuit ½ cup ½ cup 1 piece 6-1/2" pita ½ cup	1.8 1.8 1.7 1.7 1.7 1.6 1.6

Food Sources of Iron (Continued)

Food Item	Serving Size	Iron (Mg)
Beans, baked, canned, plain or vegetarian	½ cup	1.5
Beef, round bottom round, braised	2 oz	1.5
Beets, canned	½ cup	1.5
Beef, ground, 80% lean meat/ 20% fat,	2 oz	1.4
patty, broiled		
Pizza, cheese, regular crust, frozen	1 serving	1.4
Rolls, hamburger or hotdog, plain	1 roll	1.4
Asparagus, canned, drained solids	4 spears	1.3
Noodles, egg, cooked, enriched	¹⁄₂ cup	1.3
Peas, split, mature seeds, cooked	¹⁄₂ cup	1.3
Turkey, all classes, dark meat, roasted	2 oz	1.3
Cowpeas, common (black-eyed, crowder,	¹⁄₂ cup	1.2
southern), mature seeds, canned		
Collards, cooked	½ cup	1.1
Pizza, meat and vegetable, regular crust,	1 serving	1.1
frozen		
Pork, fresh, shoulder, arm picnic, braised	2 oz	1.1
Sweet potato, canned	¹⁄₂ cup	1.1
Tomato products, canned, puree	½ cup	1.1
Tortillas, read-to-bake or fry, flour	1 tortilla	1.1
Fish fillet, battered or breaded, and fried	2 oz	1.0
Fish, tuna salad	½ cup	1.0
Muffins, corn, dry mix, prepared	1 muffin	1.0
Plums, canned, purple, heavy syrup pack, solids and liquids	½ cup	1.0
Rice, white, long-grain or regular, parboiled, enriched	½ cup	1.0
Tomato products, canned, paste	2 tbsp	1.0
Tomato sauce for pasta,	½ cup	1.0
spaghetti/marinara, ready-to serve	1	
Turkey, ground, cooked	2 oz	1.0
Bread, mixed-grain (includes whole-	1 slice	0.9
grain, 7-grain)		
Bread, pumpernickel	1 slice	0.9
Bread, rye	1 slice	0.9
Bread, white, commercially prepared	1 slice	0.9
(includes soft bread crumbs)		
Bread, whole-wheat, commercially	1 slice	0.9
prepared		
Brussels sprouts, cooked, boiled,	½ cup	0.9
Chicken, broilers or fryers, breast,	½ breast	0.9
roasted		

Food Sources of Iron

Food Item	Serving Size	Iron (Mg)
Crackers, matzo, plain	1 matzo	0.9
Fish, tuna, light canned in water, drained	2 oz	0.9
Macaroni, cooked, enriched	½ cup	0.9
Muffins, blueberry, commercially	1 muffin	0.9
prepared		
Rolls, dinner, plain, commercially prepared	1 roll	0.9
Spaghetti, cooked, enriched	½ cup	0.9
Tomatoes, red, ripe, canned, stewed	½ cup	0.9
Tomato soup, canned, prepared with	½ cup	0.9
equal volume water		
Turkey roast, boneless, light and dark	1 oz light and	0.9
meat, roasted	1 oz dark	
Vegetables, mixed canned	½ cup	0.9
Bread, wheat (includes wheat berry)	1 slice	0.8
Chicken, broilers or fryers, dark meat,	2 oz	0.8
meat only, roasted		
Fish, catfish, channel, cooked, breaded	2 oz	0.8
and fried		
Fish, haddock, cooked	2 oz	0.8
Frankfurter, chicken or beef	1 frank	0.8
Potato salad, school-prepared	½ cup	0.8
Raspberries, frozen, red, sweetened	½ cup	0.8
Strawberries, frozen, sweetened, sliced	½ cup	0.8
Sweet potato, cooked, baked	1 medium	0.8
Spaghetti, whole-wheat, cooked	½ cup	0.7

Source: Adapted from the Agricultural Research Service (ARS) Nutrient Database for Standard Reference, Release 17.

Food Sources of Dietary Fiber

Good Food Sources of Dietary Fiber

All foods listed in the following chart are \geq 10% (2.5 grams)of the Daily Value (DV) of 25 grams. The DVs are used on the Nutrition Facts Label and are based on a 2000 calorie diet. A food with 2.5 grams of dietary fiber contributes a substantial amount of dietary fiber to the diet and is used here to define a good source.

Food Item	Serving Size	Dietary Fiber (grams)
Peas, split, mature seeds, cooked, boiled	½ cup	8.2
Refried beans, canned (includes USDA commodity)	½ cup	6.7
Soup, bean with ham, canned, chunky, ready-to-serve, commercial	½ cup	5.6
Raspberries, frozen, red, sweetened	½ cup	5.5
Papayas, raw	1 papaya	5.5
Sweet potato, cooked, baked in skin	1 potato (5 oz)	4.8
Artichokes, cooked, boiled, drained	½ cup	4.5
Potato, baked flesh and skin	1 potato (7 oz)	4.4
Pear, asian, raw	1 pear (small)	4.4
Bulgur, cooked	½ cup	4.1
Beans, kidney, red, mature seeds, canned	½ cup	4.1
Raspberries, raw	½ cup	4.0
Cowpeas (blackeyes, crowder, southern, mature seeds, cooked, boiled	1/2 cup	4.0
Lentils, mature seeds, cooked, boiled	½ cup	3.9
Beans, pinto, mature seeds, cooked, boiled	½ cup	3.9
Blackberries, raw	½ cup	3.8
Beans, black, mature seeds, cooked, boiled	1/4 cup	3.8
Figs, dried	2 figs	3.7
Pumpkin, canned	½ cup	3.6
Peas, green, canned, regular pack, drained	½ cup	3.5
Nuts, almonds	1 oz (24 nuts)	3.3
Dates, deglet noor	5 dates	3.3

Good Food Sources of Dietary Fiber (Continued)

Food Item	Serving Size	Dietary Fiber (grams)
Beans, kidney, red, mature seeds, cooked, boiled	½ cup	3.3
Apple, raw, with skin	1 medium	3.3
Peaches, dried, sulfured, uncooked	3 halves	3.2
Brussels sprouts, frozen, cooked, boiled, drained	½ cup	3.2
Beans, white, mature seeds, canned	½ cup	3.2
Banana, raw	1 medium	3.1
Beans, great northern, mature seeds, cooked, boiled.	1/4 cup	3.1
Sauerkraut, canned, solids and liquids	½ cup	3.0
Prunes (dried plums), uncooked	5 prunes	3.0
Lima beans, large mature seeds, canned	½ cup	3.0
Sweet potato, canned, syrup packed, drained solids	½ cup	3.0
Seeds, sunflower seed kernels, dry roasted	1/4 cup	2.9
Nuts, pistachio nuts, dry roasted	1 oz (47 nuts)	2.9
Apples, dried, sulfured, uncooked	5 rings	2.8
Peanuts, all types, oil-roasted	1 oz	2.7
Nuts, pecans	1 oz (20 halves)	2.7
Nuts, hazelnuts or filberts	1 oz	2.7
Collards, frozen, chopped, cooked, boiled	½ cup	2.7
Chickpeas (garbanzo beans), mature seeds, canned	½ cup	2.7
Peanut butter, chunk style	2 tbsp	2.6
Okra, frozen, cooked, boiled, drained	½ cup	2.6
Nuts, mixed dry or oil roasted, with peanuts	1 oz	2.6
Cereal, oat, regular, quick, and instant, cooked with water	2/3 cup	2.6
Broccoli, cooked boiled, drained	½ cup	2.6
Blueberries, frozen, sweetened	½ cup	2.6
Beans, baked, canned, plain or vegetarian	½ cup	2.6
•		

Good Food Sources of Dietary Fiber (Continued)

Food Item	Serving Size	Dietary Fiber (grams)
Apricots, dried, sulfured,	10 halves	2.6
uncooked		
Lima beans, immature seeds,	¹⁄₄ cup	2.5
frozen, fordhook, cooked,		
boiled		
Crackers, rye, wafers, plain	1 wafer	2.5
Cauliflower, frozen, cooked,	½ cup	2.5
boiled, drained		
Carambola (starfish), raw	1 fruit	2.5
Carrots, cooked, boiled, drained	½ cup	2.4
Cereal, ready-to-eat, bran and/or	1 oz	2.2 - 8.0
whole grain		

Other Food Sources of Dietary Fiber

All foods listed in the following chart contain less than 2.5 grams of dietary fiber but can contribute substantial dietary fiber when used in combination with other such foods.

Food Item	Serving Size	Dietary Fiber (grams)
Pears, canned, drained	2 halves	2.4
Nectarines, raw	1 nectarine (136 g)	2.3
Nuts, macadamia nuts, dry roasted	1 oz (10-12 nuts)	2.3
Peanuts, all types, dry-roasted	1 oz (approx 28)	2.3
Sweet potato, canned, vacuum pack	½ cup	2.3
Bread, pumpernickel	1 slice (32 g)	2.1
Apricots, canned	½ cup	2.0
Bagels, cinnamon-raisin	1 bagel (4 ")	2.0
Beans, snap, green, frozen, cooked, boiled, drained	½ cup	2.0
Bread, rye	1 slice (32 g)	1.9
Bread, whole-wheat, commercial	1 slice (28 g)	1.9
Mushrooms, canned, drained solids	½ cup	1.9
Noodles, egg, spinach, cooked, enriched	½ cup	1.9
Blueberries, raw	½ cup	1.8
Plantains, cooked	½ cup	1.8
Rice, brown, cooked	1/2 cup	1.8
Bread, mixed-grain (includes whole-grain, 7-grain)	1 slice (26g)	1.7
Crackers, whole-wheat	4 crackers (16 g)	1.7

Other Food Sources of Dietary Fiber (Continued)

Food Item	Serving Size	Dietary Fiber (grams)
Strawberries, raw	½ cup	1.6
Tortillas, ready-to-cook, corn	1 tortilla (32 g)	1.6
Apple sauce, canned,	½ cup	1.5
Dandelion greens, cooked, boiled,	½ cup	1.5
drained		
English muffin, plain, enriched,	1 muffin	1.5
with calcium propionate		
Mangos, raw	½ cup	1.5
Tangerines (mandarin oranges),	1 tangerine (84 g)	1.5
raw		
Wild rice, cooked	½ cup	1.5

Source: Adapted from the Agricultural Research Service (ARS) Nutrient Database for Standard Reference, Release 17

Appendix N: Menu Planning Practices for Healthy School Meals

Increase the variety of entrees offered.

- ✓ Plan more school-prepared items.
- ✓ Choose more lowfat, low-sodium products.
- ✓ Use lowfat cheeses, dairy products, and lower fat meats.
- ✓ Explore the possibility of offering entrée salads or a salad bar.

Where choices are not offered, limit processed meats/meat alternates that have not been modified to reduce fat and/or sodium to once a week.

Plan more fresh fruits and vegetables on your menu each day.

- ✓ Increase the amounts and variety of fruits and vegetables offered. Fruits and vegetables differ in nutrient content.
- ✓ Offer a vitamin A-rich vegetable or fruit three to four times a week.
- ✓ Plan a vitamin C-rich vegetable or fruit three to four times a week, and include them frequently for breakfast.
- ✓ Offer fruit with more potassium often, such as bananas, prunes, prune juice, dried peaches, dried apricots, cantaloupe, honeydew melon, and orange juice.
- ✓ Offer fruit often as snacks if you provide reimbursable snacks for an afterschool program.
- ✓ Frequently offer fresh vegetable salads or fresh vegetables with a lowfat dip, such as lowfat salad dressings, yogurt, or hummus.
- ✓ Offer cut-up fruit or dried fruit as a topping for yogurt.
- ✓ Frequently offer fresh fruits using a variety of presentations, such as orange smiles, apple wedges, fresh fruit cups, red and green grape combos, and banana halves.

Plan at least one menu item containing a whole grain each day.

- ✓ Plan a variety of breads and bread alternates such as whole-wheat breads, multigrain breads, whole wheat, pasta, and brown or wild rice.
- ✓ Increase the variety of cooked and ready-to-eat cereals offered at breakfast.
- ✓ Offer school-made bread. Start with one-third whole wheat flour and gradually increase to gain students' acceptance.

Plan at least one serving of cooked dried beans or peas each week.

- ✓ Offer more cooked dried beans and peas.
- ✓ Explore the great variety available such as black beans, Great Northern beans, red kidney beans, lima beans (mature), Navy beans, pinto beans, black-eyed peas, lentils, split peas, and garbanzo beans (also called chick peas), all of which can be offered in salad bars; as a vegetable such as Boston baked beans; made into soups; served as *frijoles* with Mexican food menu items; served as beans and rice in some parts of the country; and red kidney beans or pinto beans and added to chili as part of the meat/meat alternate component. Beans can be ground prior to adding chili for greater student acceptability. Garbanzo beans or chick peas can be made into hummus as a vegetable dipper.

Offer as many healthy alternate choices as your operation allows.

- ✓ In high schools, offer baked potatoes in addition to French fries.
- ✓ Offer lowfat sour cream, lowfat or nonfat yogurt for a topping in place of sour cream.

✓ Offer lowfat salad dressings in addition to regular salad dressing.

Where choices are not offered, offer no more than one high-fat menu item per meal.

Before placing new food products on your menus, obtain nutrition information about the item.

Check for type(s) and quantity of fat and the amounts of sodium and/or sugar in the item.

Offer and promote unflavored skim milk or unflavored 1 percent lowfat milk at each meal.

✓ If flavored milk, such as chocolate or strawberry milk is offered, use only 1 percent lowfat (or lower).

Appendix N

Appendix O: Milk Fat Comparison Chart

Purchasing Tips

Milk

Starting Jan. 1, 1998, the labeling of fat-reduced milk products was required to follow the same requirements the Food and Drug Administration established years ago for the labeling of just about every other food reduced in fat.

Milk's New Names				
0 ld Name	Possible New Names	Total Fat [per 240 milliters (1 cup)] Grams % Daily Value		Calories per 240 mL
Milk	Milk	8.0g	12%	150
Low-fat 2 percent milk	Reduced-fator less-fat milk	4.7g	7%	122
Not on the market	Light milk	4 g orless	6% or less	116 or less
Low-fat 1 percent milk	Low-fat milk	2.6 g	4%	102
Skimmilk	Fat-free, skim, zero-fat, no-fat or non-fat milk	less than 0.5 g	0%	80

ow known as "reduced fat" instead of "low fat"

- 1 percent milk remains "low fat"
- skim retained its name or is known as fat-free, zero-fat, or non-fat milk.

These products are now bound by the "general standard" for nutritionally modified standardized foods. This means the nutrients that lower fat milk products provide, other than fat, must be at least equal to full-fat milk before vitamins A and D are added.

The changes do not affect lower fat yogurt products. FDA decided to keep the standards of identity for the time being to further consider manufacturers' concerns about fortifying yogurt with vitamin A, a nutrient found in full-fat yogurt.

FDA, along with the milk industry and nutrition educators, believes the label changes will give consumers more accurate, useful information about milk. Because claims on milk labels will be consistent with claims on other foods, consumers will know, for example, that "lowfat" milk (formerly known as 1 percent milk) will be similar in fat content to "lowfat" cookies. (Both can provide no more than 3 grams of fat per serving. The serving size for each is listed on their label's Nutrition Facts panel.)

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The goal of the labeling changes was to help consumers select milk products that can help them lower their fat and saturated fat intakes to recommended levels. Considering that 8 fluid ounces of full-fat milk provides 26 percent of the Daily Value for saturated fat, while fat-free milk provides none, switching from full-fat to fat-free milk can drop saturated fat intake considerably. It's an easy way to lower fat intake—it doesn't take a lot of time—no preparation skills are needed. A report of a school intervention in an inner-city, primarily Latino, school district in the city of New York involved switching from whole milk to 1% lowfat milk in 6 elementary school cafeterias. Based on the results of this switch, a 25% reduction in calories from saturated fat occurred, with no other dietary changes.
¹ Wechsler, H, Basch, C, Zybert, P and Shea, S. Promoting the selection of lowfat milk in elementary school cafeterias in an inner-city Latino community: evaluation of an intervention. Amer J of Public Health. 88:3, 1998, pp. 427-433
Appendix O ■ O-2

Appendix P: Discussion on Types and Examples of Dietary Fat

Types of Fat

Saturated Fats

Saturated fats increase the risk for coronary heart disease by raising the blood cholesterol. Saturated fats are hard (solid) at room temperature. They are generally from animal sources, e.g., high-fat dairy products (like cheese, butter, whole milk, cream and regular ice cream), fatty fresh and processed meats (such as sausage and hot dogs), the skin and fat of poultry, and lard. However, there are some plant sources, e.g., tropical oils (coconut, palm, palm kernel) of saturated fats.

Trans Fatty Acids

In recent years, the nutrition and medical community have turned their attention to another type of fat that has been strongly linked with the development of coronary heart disease. Trans fatty acids, also known as *trans fat* are found in many processed foods including vegetable shortenings, some margarines, crackers, cookies, and snack foods. Trans fatty acids are produced by a process called *partial hydrogenation*, which involves heating liquid vegetable oils to make them solid. Hydrogenation increases the shelf life and flavor stability of these oils and the foods that contain them. Today it is believed that trans fatty acids tend to raise blood cholesterol to a greater degree than saturated fats.

Based on recent studies linking trans fatty acids to coronary heart disease, the Food and Drug Administration (FDA) now requires trans fat information to be added to the food labels. Food manufacturers have until January 2006 to comply with FDA's rule.

Unsaturated Fats

Unsaturated fats, which include polyunsaturated and monounsaturated fats, do not raise blood cholesterol. They are found in vegetable oils, most nuts, olives, avocados and fatty fish like salmon. Polyunsaturated fat is liquid at room temperature. Examples are:

- **Polyunsaturated** soybean, safflower, canola, corn and cottonseed oils, many kinds of nuts, oils (omega-3 fatty acids) in cold water fish such as salmon, albacore tuna and mackerel.
- Monounsaturated olive, canola, sunflower and peanut oils, olives and peanut butter

No fat is 100 percent saturated or unsaturated

Appendix Q: Purchasing Practices for Healthy School Meals

Milk and Dairy Products

- ✓ Purchase lowfat and/or skim fluid milk fortified with vitamins A and D.
- ✓ Purchase lowfat or nonfat yogurt fortified with vitamins A and D.
- ✓ Whole milk may contain either 3.3 percent or 3.7 percent fat. Know the percent of fat in the milk you purchase.
- ✓ Purchase lowfat cheeses such as part-skim mozzarella and lowfat or fat-free dairy products.
- ✓ Purchase ice cream less frequently. Offer ice milk, sherbet, lowfat or nonfat frozen yogurt, or frozen fruit juice bars (not frozen fruit-flavored bars, which are considered foods of minimal nutritional value (FMNV)).

Condiments

✓ Purchase reduced-fat/reduced-sodium salad dressings and mayonnaise, as appropriate, or make your own using less oil and salt. Allow students to taste-test these products for acceptability prior to purchase.

Meat/Meat Alternates and Entrées

- ✓ Purchase reduced-fat/reduced-sodium meats and meat alternates when available.
- ✓ Purchase ground poultry (without skin–approximately 11 percent fat) to mix 50-50 with lean ground beef.
- ✓ Purchase cold cuts, deli meats, and hot dogs with no more than 3 grams of fat per ounce.
- ✓ Purchase water-packed tuna fish instead of oil-packed.
- ✓ Limit the purchase of convenience items that are pre-fried in fat during processing.
- ✓ Taste-test lower-fat, lower-sodium convenience items prior to purchasing. Ask students, faculty, and foodservice staff to participate in the taste testing to identify acceptable products.
- ✓ Request vendors provide nutrition information for all products purchased. Use this information to compare nutrient information on various products to determine if lower-fat items would be acceptable.

Fruits and Vegetables

- ✓ Purchase fruits canned in light syrup or natural fruit juices instead of heavy syrup.
- ✓ Purchase fresh fruits, where feasible, to substitute for canned fruits.
- ✓ Purchase fresh and frozen vegetables, when feasible, to substitute for canned vegetables, which are high in sodium.
- ✓ Purchase oven-ready fries, instead of fries for deep-fat frying. Check and compare the fat content of the oven-ready fries to the deep-fat frying fries. Many times, the oven-ready fries have been processed with a coating of oil to make them brown, resulting in a high fat content.

Appendix Q ■ Q-1

Oils and Fats

- ✓ Purchase items that have been prepared/processed with unsaturated vegetable oils. Avoid products made with coconut or palm oils, very saturated fats.
- ✓ Purchase polyunsaturated and/or monounsaturated oils, such as canola, corn, cottonseed, olive, peanut, safflower, soybean, or sunflower oils.
- ✓ Do not purchase lard, a very saturated fat.
- ✓ For highest polyunsaturation, purchase margarines with the first ingredient being liquid, e.g., liquid corn oil.
- ✓ Avoid hydrogenated oils/fats (trans fats)
 - A label with hydrogenated oil among its ingredients has increased saturation over the liquid counterpart, e.g., partially hydrogenated soybean oil.
 - Soft "tub style" margarines are less hydrogenated (less saturated) than stick margarines.

Grains and Breads

- Specify whole-grain as the primary ingredient or purchase a product that contains at least 30 percent whole-grain flour when purchasing breads, buns and crackers.
- ✓ If schools bake their own breads, gradually increase the amount of whole wheat flour in the basic roll or bread recipe. Start with 1/3 whole wheat flour, then gradually increase from school year to school year as student increase acceptability.

Seasonings

✓ Purchase garlic, onion, and celery powders or granules, not garlic onion or celery salts, which have more sodium. Purchase seasoning mixes that do not contain monosodium glutamate (MSG) or salt or where salt is the primary ingredient.

Appendix Q ■ Q-2

Appendix R: Food Preparation Practices for Healthy School Meals

Train all foodservice staff in food preparation techniques that guarantee food quality, limit calories from fat, and keep sodium in moderation while providing the calories and nutrients that children need to develop healthy bodies and minds.

To reduce fat

- ✓ Trim visible fat from raw meats before cooking.
- ✓ Cook meat on rack or drain fat from cooked meat (put in colander to drain or use a meat baster to remove fat).
- ✓ Chill meats, meat drippings, soups, stews, and sauces, when appropriate, so fats will solidify and can be easily removed.
- ✓ Limit deep-fat and pan frying; bake, broil or steam foods instead. When using precooked breaded meats, poultry, or fish, oven bake instead of frying them.
- ✓ When deep-fat fried foods are offered, select an unsaturated fat and carefully follow correct temperature, time and draining procedures.
- ✓ Modify recipes by reducing the amount of butter, margarine, oil or shortening called for in the recipe, as appropriate. Reduce amounts of butter/margarine used for seasoning; do not use bacon grease, lard, or salt pork.
- ✓ Use non-stick cooking spray or parchment paper to reduce the amount of fat needed to prevent baked products from sticking.
- ✓ When serving fried fish or fried potatoes, offer lowfat condiments (e.g., lemon wedges, malt vinegar, catsup, sweet and sour sauce) instead of tartar sauce or other high-fat sauces.
- ✓ Use skim milk or nonfat dry milk in place of whole milk or cream in recipes when possible. Use plain yogurt instead of sour cream.
- ✓ In preparing items such as potato salad, carrot-raisin salad, chicken salad, etc., replace a portion of the mayonnaise-type salad dressing with plain, lowfat or nonfat yogurt.
- ✓ Reduce the amount of salad dressing you use on tossed or mixed salad.

To reduce salt or sodium

- ✓ Modify recipes by reducing the amount of salt, soy sauce, Worcestershire sauce, and other salty condiments as appropriate. Omit monosodium glutamate (MSG) from recipes.
- ✓ Do not add salt to canned vegetables.
- ✓ Lightly salt fresh and frozen vegetables and entrees. Gradually reduce the amount of salt as low as the students will accept.
- ✓ Experiment with herbs, spices, and lemon for seasonings to use in place of salt.
- ✓ Reduce or eliminate the salt in the cooking water when cooking rice or pasta, if these foods will be served with a sauce or gravy or in a casserole.

Appendix R ■ R-1

To increase fiber

- ✓ Leave edible peels/skins on fruits and vegetables (e.g., use unpeeled apple in salads and fruit cups, leave potatoes unpeeled) for added fiber.
- ✓ Add whole wheat flour to baked items such as rolls, cookies, etc.

To retain nutrients

✓ Cook vegetables in small batches until only tender-crisp. Do not hold longer than 20 minutes to retain nutrients, flavor, and color.

Develop and use standardized recipes

Every recipe that you use in your kitchens must be standardized. This includes all recipes that have more than one ingredient

The U.S. Department of Agriculture defines a standardized recipe as one that:

- Is tried, adapted and retried several times for use by a given foodservice operation.
- Produces the **same** good results and yield every time by using the exact same procedure, same type of equipment, and same quantity and quality of ingredients.

Use the following procedures to monitor the use of standardized recipes:

- ✓ Determine if the correct recipe is being used that was planned for the menu.
- ✓ Examine the ingredients that have been used to ensure that the recipe is prepared as planned.
- ✓ Check the quantity or yield that was prepared for the site.
- ✓ Determine if there are leftovers and the reason for overproduction.
- ✓ Observe portioning to ensure the correct serving utensil is used.
- ✓ Examine the kitchen setting and equipment needed to prepare the recipe.
- ✓ Make "follows standardized recipes" one of the criteria for performance evaluation. This indicates the SFA's priorities.

Appendix S: Meal Service Practices for Healthy School Meals

- Work with school superintendent, principal, PTA or PTO, and/or other appropriate groups to ensure that students have sufficient time to select and consume a healthful meal
- Ensure that lowfat and skim milk are available throughout the entire lunch period
- Check temperature of milk to make sure it's cold and acceptable to students
- Place skim and lowfat milks toward the front of the milk cabinet to facilitate their selection
- Merchandise foods to encourage consumption of lowfat menu items
- If a la carte food items are sold at all, make sure they are reflective of SMI, i.e., healthy choices
- Offer meals that incorporate principles of good menu planning, including variety and a good balance of colors, shapes, textures, temperatures, flavors
- Plan attractive garnishes for steam table pans or individual pre-portioned foods
- To ensure student appeal, conduct taste tests of new recipes and commercially-prepared food products

Ideas for Program Promotion and Improvement

- Promote healthful meal choices in menus and on the serving line
- Model good eating habits and a positive attitude toward healthy foods
- Promote good nutrition to teachers and school staff and enlist their support in modeling positive attitudes toward healthy eating
- Provide nutrition education to students, parents, teachers, and/or food service staff, as appropriate
- Include nutrition information on menus sent home to parents

Appendix S

Appendix T: Team Nutrition School Enrollment Form

Team Nutrition School Enrollment Form **Our Team Nutrition School Leader is:** ☐ Ms. ☐ Mrs. ☐ Mr. ☐ Other ______ LAST NAME _____ SCHOOL'S NAME _____ TOTAL ENROLLMENT _____ GRADES TAUGHT __ SCHOOL DISTRICT ____ _____ SCHOOL COUNTY ___ SCHOOL ADDRESS ___ _____ STATE _____ ZIP CODE ____ TELEPHONE () _____ FAX () ____ Please check one or more of the appropriate grade ranges: P (PRESCHOOL) PRE-K ☐ E (ELEMENTARY) K-5/6 M (MIDDLE) 6/7-8 H (HIGH) 9-12 We agree to: Suport USDA's Team Nutrition goal and values. • Involve teachers, students, parents, food service Demonstrate a commitment to help students personnel, and the community in interactive and meet the Dietary Guidelines for Americans. entertaining nutrition education activities. Designate a Team Nutrition School Leader who • Participate in the National School Lunch Program. will establish a school team. • Demonstrate a well-run Child Nutrition Program. • Distribute Team Nutrition materials to teachers, • Share successful strategies and programs with students and parents. We certify our school does not have any outstanding overclaims or significant program violations in our school meals programs. SCHOOL FOOD SERVICE MANAGER, PRINTED NAME SCHOOL PRINCIPAL, PRINTED NAME SIGNATURE SIGNATURE DATE DATE

Fax to: Team Nutrition (703) 305-2549 Mail to: Team Nutrition, 3101 Park Center Drive, Room 632, Alexandria, VA 22302

Appendix U: Checklist of Documents Needed for an SMI Review

School Name:	Period of	f Analysis:	
Source Documents		Complete	Additional Data Needed
Menus (for the school week being reviewed)			
Choices indicated			
Menu changes or substitutions indicated (dated)			
Production Records (for the school week being rev	iewed)		
Site name, meal date, and menu type (breakfast of the state)	or lunch)		
Forecasted number of meals by age/grade group			
All planned menu items, including milk types an	d desserts		
All condiments used as a complement to the rein meal (i.e., mustard, salad dressing, margarine, et			
Recipes or food products used including form of canned, frozen, dried, halves, slices, etc.)	food (i.e.,		
Brand names and product code numbers of comprocessed foods	nercially		
Serving sizes for each age/grade group of each n or food item served, including condiments	nenu item		
Number of portions planned for each menu item age/grade group	, by		
Total amount of food prepared for the planned not servings (i.e., number of servings, pounds, cans,			
Number of leftovers and substitutions (serving signature)	ze or		
Number of portions and serving sizes for adult n	neals		
Number of reimbursable meals served (for each group)	age/grade		
Number of non-reimbursable meals served (such adults or as a la carte sales)			
Number of meals served that contain substituted order to accommodate special dietary needs (if a			

Appendix U ■ U1

School Name:	Period of Analysis:		
Source Documents		Complete	Additional Data Needed
Recipes (for any menu item indicated on production that contains more than one ingredient)	records		
Yield (includes serving size and number of serving)	gs)		
List all ingredients; including form, packing medifat content	um, and		
Correct measures, weights and/or pack size			
Include preparation procedures			
Nutrition/food component information for commerce processed food items	cially		
 "Nutrition Facts" label or equivalent information manufacturer 	from		
Child Nutrition (CN) labels and/or Product Formu Statements if using a food-based menu planning a			
Preparation Instructions			
Printout of nutrient analysis for review week—of m and recipes (required for NSMP/ANSMP)	enus		
Indication that re-analysis is warranted		☐Yes ☐No	

Appendix U ■ U2

Appendix V: NSMP/ANSMP - Examples of Variations in Meal Structure

NSMP/ANSMP					
EXAI	EXAMPLES OF VARIATIONS IN MEAL STRUCTURE FOR				
	HEALTHY MEAL CHOICES				
	3-Menu Item Meal	4-Menu Item Meal	5-Menu Item Meal	6-Menu Item Meal	
ENTRÉE	Choose 1: Baked Fish Nuggets Sausage Pizza Chili, Vegetarian (with Bread Sticks)	Choose 1: Baked Fish Nuggets Sausage Pizza Chili, Vegetarian (with Bread Sticks)	Choose 1: Baked Fish Nuggets Sausage Pizza Chili, Vegetarian (with Bread Sticks)	Choose 1: Baked Fish Nuggets Sausage Pizza Chili, Vegetarian (with Bread Sticks)	
SIDE- DISHES	Group 1: Choose 1 Broccoli Pinto Beans Orange Slices Macaroni & Cheese Banana Halves	Group 1: Choose I Broccoli Cole Slaw Pinto Beans Grapes Orange Slices Group 2: Choose I Garlic Bread Brownies Macaroni & Cheese Banana Halves Raisin Cups	Group 1: Choose 2 Broccoli Cole Slaw Pinto Beans Grapes Orange Slices Group 2: Choose I Garlic Bread Brownies Macaroni & Cheese Banana Halves Raisin Cups	Group 1: Choose 2 Broccoli Cole Slaw Pinto Beans Grapes Orange Slices Group 2: Choose 2 Garlic Bread Brownies Macaroni & Cheese Banana Halves Raisin Cups	
MILK	Choose 1: Nonfat Milk Low fat Milk	Choose 1: Nonfat Milk Low fat Milk	Choose 1: Nonfat Milk Low fat Milk	Choose 1: Nonfat Milk Low fat Milk	
NUMBER OF MENU ITEMS REQUIRED FOR OVS	This is a 3-menu item meal. Students must select a minimum of two items.	This is a 4-menu item meal. Students must select a minimum of two items.	This is a 5-menu item meal. Students must select a minimum of three items.	This is a 6-menu item meal. Students must select a minimum of four items.	

Appendix V